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## THE PSYCHOLOGY OF DROWSINESS

### AN INTROSPECTIVE AND ANALYTICAL STUDY

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The investigation of sleep and dreams seems to the writer to have neglected to explore in an adequate way a region of normal conscious life which merits more attention. This region is the state of drowsiness, which usually precedes the sleep state, and which is especially prominent and long drawn out in conditions of over work or unduly protracted waking hours. Much, of course, is known of the dreamy mental states so clearly described by Crichton-Brown<sup>1</sup> and intimately related to the auræ which frequently precede epileptic seizures, and of the various disturbances of sensation and perception in *neuraesthesia*, *psychaesthesia* and the many pronounced types of alienation.<sup>2</sup> Something is known of the variously named hypnoid, hypnagogic or pre-sleeping state which is often found to precede the hypnotic trance, and of the dissociations found in hysteria. The "dreamy mental states" described by Crichton-Brown in his Cavendish lecture were such experiences as "double consciousness—loss of personal identity—a going back to childhood—vivid return of an old dream—losing touch with the world—deprivation of corporeal substance—loss of sense of proportion,—momentary black despair—being at the Day of Judgment," etc. And they are asserted to be "abnormal in their essence and morbid in their tendencies."

But references are few in the literature to the suggestive and quite common hallucinations and perceptual complications experienced by supposedly normal people in the state of drowsiness, and such search as the writer has been able to make has disclosed no careful description or analysis of this state. Prince<sup>3</sup> has recently asserted that the pre-sleeping state has "certain marked characteristics which distinguish it from the alert state of waking life and is worthy of study in itself." M. Maury<sup>4</sup> in the report of his experiments on dream

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<sup>1</sup>Dreamy Mental States—The Lancet, July 6, 13, 1895; Nos. 3749-50.

<sup>2</sup>Paton: Psychiatry, pp. 26-127.

<sup>3</sup>Mechanism and Interpretation of Dreams. Jour. Ab. Psy., 1910, p. 139.

<sup>4</sup>Le Sommeil et les Rêves. p. 42, etc.

production describes the so-called "hypnagogic hallucination" which he regarded as constituting "the chaos out of which the dream cosmos is evolved," and Herschel<sup>1</sup> has described "sensorial visions" which occur during the waking state, but these seem to be merely the familiar entoptic phenomena of waking life. Sully<sup>2</sup> calls attention to the presence of transition states between sleeping and waking and to the comparative ease with which sense illusions occur in these states. These seem to be the "hypnagogic states" of Maury, "states of somnolence or sleepiness in which external impressions cease to act, the internal attention is relaxed, and the wierd imagery of sleep begins to unfold itself." But Sully's chief emphasis is on the persistence of the dream hallucination proper into the postsomnial condition.

Conceivably the state of drowsiness might throw considerable light on dream formation, the relation between the latent and the manifest content of dreams, and the various ways in which external impressions and central dispositions are transformed and related in the serial dream. Drowsiness is the transition state between waking consciousness and dream life, and careful observation of this state should be able to catch dreams in the making and to disclose the tendencies which attain their maximal operation in the sleep state proper. Whether or not it be true that the genuine dream is experienced only in moments of awaking from or falling into the sleep state is immaterial. The dream as a more or less systematic articulation and fabrication is quite distinguishable from the unique fusions which come in moments of drowsiness. In the experience of the writer and his observers these latter are more often momentary perceptual states, flashlights of imagery of unwonted vividness which may as such be repeated in successive moments but which do not tend to lead on to new situations as do dream states. And yet these perceptual fusions show striking points of similarity in their composition to the various units of the serial dream.

The purpose of this paper is to describe several typical cases of the drowsiness hallucination and to analyze out some of the principles which clearly contribute to their formation. Two observers, the writer (H) and his wife (L), have for the last two years been recording these experiences, with the result that an accumulation of cases has been acquired which seem to show sufficiently pronounced characteristics and similarities to make their discussion worth while. The observations have invariably been made in the pre-sleeping

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<sup>1</sup>"On Sensorial Visions" in *Popular Lectures on Scientific Subjects*.

<sup>2</sup>*Illusions*, p. 184.

state, for neither of the observers has the drowsiness hallucination in any marked degree in the pre-waking state. In all cases the observer has been aware of the hallucinatory character of the experience, and has immediately written out the description or narrated it to the other observer.

The imagery type of the observer, as will be shown later, seems to be to some extent, a determining factor in the composition of the hallucination content, in that modes which are only vague and seldom used in the waking state become vivid and active in the drowsy condition, while the type modes fall into the background. It will then be of interest to know that according to frequent imagery tests L is predominately visual and visual-verbal in type with almost no auditory or motor tendencies, while H is very highly auditor-motor, both as to imagery and memory type, has frequently had auditory and motor hallucinations, especially marked in childhood, but is a very poor visualizer. Typical cases are given in the following paragraphs, and in the subsequent analysis these cases will be referred to by number.

Case I. Observer H. On board ocean-liner, dressing for dinner in suit purchased abroad, sitting drowsily on edge of berth and thinking that the suit had turned out to be a bad investment and had been forced on to me by a tricky salesman. Planning to buy cloth this time to be made up in United States and wondering if it would pass Customs. Suddenly the rush of water heard through the porthole becomes transformed into the husky voice of a salesman trying to sell me a suit. I fall to musing in the process, wondering, while he talks, at his husky voice and why he has no more inflection.

Case II. Observer H. At Victor Herbert's opening concert, 1909, L—, E—, and myself were talking of the cartoons of Mr. Bug in "Life." L— described a cartoon in which the six legs of Deacon Fire-fly were represented as grasping different objects such as a Bible, a prayer book, etc., while Mr. Bug held playing cards, a bottle, a cigar, etc. I had been working all day on comparative nervous anatomy, preparing a lecture on complications of stimulus and response, and had my head full of segments and nervous arcs. The orchestra played Grieg's "Wedding Day at Hegstad." In the last bar there were three finishing blasts with full orchestra. I had become very drowsy and these blasts seemed to me to be movements of some huge bug which came sailing from behind the wings, suddenly alighting on the stage, first on the two hind feet, then bringing down the middle pair, and finally the two front feet with the final blast. The visual elements present were of huge, vague, rather reddish brown jointed legs, the feet not clear and only the lower ventral side

of the body dimly suggested, but flashing out at each "land" of the feet.

Case III. Observer H. In bed, winter '09, with "grippe." Kept tossing from side to back, then to other side. As I tossed the numbers 50, 2, 36 kept running in my head, appearing clearly visually as 5236, and auditorially as "fifty two—thirty six." Now these (50, 2, 36) were the combination numbers of my gym locker, which I opened by turning the knob left-right-left-right, four turns, very much as I now tossed in bed. In my tossing the numbers rang and rang in my head, the left side seeming 52, the right side 36, the back 5236. It seemed that if I could juggle these numbers into the right combination I could find a comfortable position.

Case IV. Observer L. Tossing experience similar to above, but seemed to be going to Brooklyn and back, Mrs. M.—who lives there having lately been uppermost in mind through conversation, letters and a recent visit.

Case V. Observer H. Played checkers nearly all day on steamer. Retiring to cabin before sleeping time, threw myself drowsily on my bunk and fell to ruminating over some projected experiments on the comic, wondering whether to follow method of order of merit or that of assigning numerical grade to each comic situation. I decide, but in my half awake consciousness the decision takes the form of a move in checkers. I decide to move my white man up to the king row and mentally see C— jump it with his black.

Case VI. Observer H. Lying in bed talking. In a pause I see a large marble toad-stool which seems to stand on a hill and to resemble the dome of the New York University Library, around which runs the Hall of Fame. On top of the toad-stool bell were stamped in large black letters, three names, "Jastrow," "Gillis," and another blurred one which I could not make out. At once I told my companion of the vision, saying "I see a curious hall of fame," etc. That evening I had read some comments on Jastrow's magazine article on "Malicious Animal Magnetism" and had also seen in a comic paper a picture called "The Annual Ball of the Mushrooms." Psycho-analysis threw no light on the name "Gillis" nor on the blurred name.

Case VII. Observer L. Had a bad toothache, and though very sleepy and worn out could not sink into a sound slumber because of the pain. For several hours I lay in a state of semi-consciousness, tossing from side to side in a drowsy effort to find a comfortable position. All day I had been very intently working on a coat which I was making, and my tossings back and forth were all in terms of the seams on the coat, *i. e.*, as I turned to the right the seam down the

right side of the garment was inspected, then as that position gradually grew unbearable the seam began to wrinkle, to pucker, and to become quite unmanageable. Thereupon I decided to work awhile on the other seam, and turned to the left side and carefully basted and pressed the seam on the left side of the coat. But, though it behaved very satisfactorily for a time, it too, soon began to wrinkle and the thread to snarl. In despair I attacked the seam on the right side again, that is, I turned over to my right side once more. This continued for an indefinite time. I was in despair. I feared the garment would be quite ruined. All through these hours I was conscious of the slight flapping of the window blind and twice I replied quite sensibly to the questions of my companion, and noted the striking of the hours on a clock in another apartment. But the illusion that I was wrestling with the seams of a refractory garment was not dispelled till I fell asleep at daylight.

Case VIII. Conversations during the drowsy state.

(a) L— Let's hurry and get there by ten o'clock.

H— That's easy. I could get there by a nickel to ten.  
(It was then 9.50)

(b) H— (As L rises from the sofa where she has been resting and leaves the room) So you want some water, huh?

L—(Entering again) What did you ask about a drink?

H—Nothing.

L—But you asked me something about water.

H—(drowsily) It was n't an asker, it was just a sayer.

(c) H is said to behave when drowsy much like a child or like a half-intoxicated man,—thus: he approaches an old pillow spotted with ink blots and asserts in a child-like way quite without provocation or connection,—“Red ink! black ink!” pointing to the spots meanwhile.

(d) L asks question to which H replies, quite without relevance, “I don't think you could see the manuscript.”

(e) L— “How curious the moon looks behind the clouds!”

H—Yes, just like a thin place in the sky.”

Case IX. The writer has frequently recorded fantastic experiments and conclusions developed either alone or during discussions, late at night. At the time of their conception all of these plans and insights seemed highly rational, strikingly original and wonderfully significant, and the observer has usually marvelled that nobody had ever seen the thing so clearly before. He has frequently gone ahead after the midnight hours and prepared the material for one of the revolutionary experiments or demonstrations just conceived. But when the plan or conclusion has been gone over on the following morning the most striking thing about it has been its splendor

as a work of unbridled imagination, but its absurdity as a scientific achievement. The argument is found to abound with fallacies or the experimental procedure with sources of error that were lightly bridged over the night before. The experience is no doubt a very common one. It seems much like the nocturnal aeronautic inspection of a line of march which must be gone over on foot when daylight comes.

Case X. The reason for citing the two following literary references will be seen later. They are typical drowsiness figures.

(a) This passage from Stevenson's letters to Henry James (Stevenson, *Letters*, p. 435) must have been written late at night and in a state of drowsiness. In fact Stevenson says earlier in the letter "my wife being at a concert and a story being done," indicating a late hour, and (especially in Stevenson's case) fatigue. Speaking of the "Henry James chair" the writer of the letter says, "It has been consecrated to guests by your approval and now stands at my elbow gaping. We have a new room, too, to introduce to you—our last baby, the drawing room; it never cries and has cut its teeth. Likewise there is a cat now."

(b) De Balzac, who wrote the following passage must have been a night worker,—“He saw his teeth departing one by one like brilliantly dressed ladies from a ball room.”

The experiences here recorded can hardly be classed as dream states though it is true that only a little elaboration would be needed to make them develop into such states. They all occurred during waking moments, and frequently (See Cases 2, 5, 7) there is clear evidence that the observer is actively engaged in some waking employment or lively thought process or is conscious of external events. Yet most of them are hallucinatory in character. Examination of such cases as those given above reveals several rather clearly defined principles of composition or general tendency. Chief among these are the following, the exposition of which seems to constitute a fairly true, though perhaps, only partially complete analysis of the state of drowsiness. Other experiences of much the same kind could be given, some of which are withheld only because of their close personal character, but all point in the same direction as the cases here given, some of them even more definitely.

#### 1. TRANSFORMATION OF IMAGERY TYPE

Modes ordinarily vague and feeble become here dominant and vivid, even tending to replace customary imagery habits. Thus H, who is predominantly auditory and motor in type and can only with difficulty summon up visual images of even

the most moderate vividness, has, in the drowsy state, visual experiences which constantly amaze him by their clearness. (See Cases 2, 3, 5, 6.) I, to whom sharp visual imagery is a common habit, but who, in her waking consciousness cannot understand what kinesthetic imagery is like, tends, in the drowsy state, to relive motor experiences almost exclusively. (See Cases 4 and 7). Along with this emphasis of unusual modes goes the subordination of dominant modes, so that in the drowsy state as in dream life, images even of these unusual types seem to exceed by far in intensity the clearest images of the waking state.

It seems to be generally true that with increased age, increased book learning and, in general, with practice in verbal modes of thinking, sense imagery gives way to word imagery of one kind and another.<sup>1</sup> Parallelling this fact, many people have complained to the writer that with maturity they lose their long drawn out delight in books, and especially in descriptive literature. They tend more and more merely to scan such passages and hence to read books much more quickly. They may regret the loss of the old source of satisfaction, the character of which they do not understand. Evidently what happens is that sense imagery is waning and description no longer has its old power of awakening interest or calling forth emotion. In drowsiness this state tends to disappear. The dominant modes in which one has become accustomed to think in the more rigorous sense, seem to tend toward sleep more quickly, while the lower, more strictly sensory centres remain active or go to sleep more slowly.

(*Note.* Since the preceding paragraph was written the writer, in re-reading Professor Titchener's striking analysis<sup>2</sup> of his own imagery processes, has found what seems to be another clear instance of the transformation of imagery type. Although this observer says it is possible for him to "trust to the guidance of kinæsthesia," this mode of imagery does not seem to predominate in his daily life. The following statements show the apparent superiority of his visual and auditory imagery. "I rely in my thinking upon visual imagery . . ." etc. "My visual imagery, voluntarily aroused, is extremely vivid." ". . . visual imagery which is always at my disposal and which I can mould and direct at will." But he also has "vivid and persistent auditory imagery" and never sits down to work without a "musical accompaniment." Kinæsthesia seems to play a rather sub-

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<sup>1</sup>Galton: *Inquiries into Human Faculty*, p. 60.

<sup>2</sup>Experimental Study of the Thought Processes, 1909, p. 9.



ordinate rôle, although we do find the remark, "As a rule I look to all three kinds of prompting in the course of a single hour." But, and this is the interesting point in the present connection, ". . . *when I am tired* (*italics mine*) I find that vision and audition are likely to lapse, and I am left alone with kinæsthesia."

In this state the condition of early childhood is reproduced and sense imagery may become vivid, intense and grotesque. This tendency, along with the absence of sensory stimulation probably accounts as well for the greater vividness of images in dreams. The frequency and character of dream imagery has sometimes been taken as an index of the type habits of waking life, but the transformation tendency shown in the observations here presented seems to show clearly that this is not the case on the state of drowsiness. The difference may, perhaps, be explained by supposing that in sleep all the centres are more nearly equally quiescent, while in drowsiness the type centres slumber first, thus giving prominence to modes not usually relied on.

## 2. SUBSTITUTION

Within the content of the drowsiness fusion it will be seen that a present impression, a preservative tendency or, perhaps, even a pure memory element often substitutes itself for some other datum whose rôle it fills in the perceived composition of the hallucination. Illustrations of these forms of substitution are afforded by the cases here reported.

(a) Sensory Substitution. Here a present sensory impression takes upon itself the task of impersonating more ideal or memory contents, of bearing their qualities, carrying out their behavior and in a general way acting for them. Thus in Case I the sound of the waves washing against the sides of the boat assumes the rôle of the foreign salesman, becomes his voice and seems to constitute his conversation. In Cases 3, 4, and 7 present motor processes (tossings, turnings and other changes of position) become the vehicle on which are borne memory experiences of a day or two before.

(b) Perseverative Substitution. Case V in which the thinking out of the technique of an experimental problem seemed to be carried on in terms of the manipulation of the white men on a checker board, affords an excellent illustration of the tendency of perseverative impressions to play the rôle of other data.

(c) Ideal Substitution,—in which an ordinarily revived image becomes the substantive for experiences more or less remote or assists in the interpretation of a present impression is rather difficult to demonstrate for two reasons. In the first

place it is not easy to draw the line between perseverative impressions and supposedly revived images. Thus in Case I the huge bug which was conceived as alighting on the platform in order to apperceive the three successive orchestra blasts, was evidently a pure object of "creative imagination," for no previous impression had corresponded to a creature of such dimensions. Yet the character of this imagery content was probably determined by certain perseverative tendencies arising from the prolonged consideration of the various types of nervous anatomy. In the second place, substitutions of the sensory and perseverative type usually involve a correlative displacement of the ideal content for which they act, and in setting up ideal substitution as a third type, on the basis of the data at hand, one is perhaps, merely paraphrasing what he has already said.

At any rate it is clear that interchange of ideal with both sensory and perseverative content and interchange of sensory with perseverative content occurs. Whether one pure ideal datum may act as substitute for another, future observation may show. DeBalzac's simile (x, b) which sounds much like the conversation of a drowsy man, seems to be a case of such substitution. More will be said of such literary figures in the following paragraphs.

### 3. FLUID ASSOCIATION ON A SENSORY BASIS

with removal of constraining mental sets and controls. This leads to bizarre analogies, naïve statements and unusual verbal combinations. In this respect the state of drowsiness seems to be quite like genuine dream consciousness, in which such free association tendencies are so pronounced. Thus De Manacéine<sup>1</sup> points out "the tendency which compels us during sleep and during enfeebled states of consciousness generally to associate everything which presents some common resemblance, for example—words according to their sound, and images according to some accidental and external resemblance. The same tendency is observed in the uneducated and very markedly in the insane. . . Any resemblance in color or form is enough to associate images which are altogether (1) heterogeneous." Again, "There is a well known tendency in dreams for the perpetration of bad puns, sound leading sense, as happens frequently with the insane, idiots and young children." Prince<sup>2</sup> in referring incidentally to the characteristics of the pre-sleeping state has written, "ideas course through the mind in what appears to be a disconnected fashion, although probably determined by associations.

<sup>1</sup>Sleep, p. 283 ff.

<sup>2</sup>*Op. cit.*

Memories of the preceding day and of past thoughts which express the interests, desires, fears and anxieties of the psychological life and attitudes of the individual float in a stream through the mind like a phantasmagoria."

Examples a, b, c, d, and e under Case VIII afford concrete illustrations of such uncontrolled accidental association. Formal, practical and conceptual constraints being removed, resemblances of a sensory and ordinarily unnoticed kind, which seem to involve only lower nervous centres become predominant, verbal plays (b), naïve confusion of related concepts (a), absurd juxtapositions (d) and attention to irrelevant details (c) abound in the state of drowsiness. Not infrequently similes and affective chords are hit upon which with only a little treatment would become adequate literary figures (e).

Indeed, many of the choicest paragraphs to be found in the works of imaginative writers bear all the birth marks of a drowsiness conception. The illustration from Stevenson's letters (10a) is clearly a case of unusually vivid imagery, sensory substitution and uncontrolled association. In this connection Marsh's study<sup>1</sup> of the favorite work hours of 160 eminent writers is extremely interesting. Some of Marsh's conclusions are as follows:

"If the poets and novelists are roughly designated as an imaginative class and the historians, clergymen, essayists, critics, journalists, philosophers, etc., as a broader intellectual class we shall find the former predominant in the morning and night groups and the latter in the day ones;" ". . . of the after midnight workers all are of the imaginative type;" ". . . excitation of some sort is most often the precondition of the highest imaginative work." ". . . numerous and well-patronized methods of mental stimulation—from ordinary walking, riding or music to hourly service of blackest coffee, greenest tea or strongest opium or to constant use of tobacco, before and during composition. The extensiveness of this practice among the imaginative writers is striking."

One might mention in the same connection the fact that Mark Twain is said to have done most of his writing in bed, if not while actually sleepy at least in the sleeping posture, and the further fact that certain favorite poets have produced nothing of note since they were induced to sign the temperance pledge. The use of drugs and the preference for night hours both point in the same direction. It seems to have been shown plainly that the apparent stimulating effect

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<sup>1</sup>Diurnal Course of Efficiency, Archives of Psychol. No. 7, 1906, pp. 59-69.

of such drugs as are used depends on the fact that they narcotize the higher centres, on the functioning of which depend our control processes and constraining mental sets. And much the same condition seems to be the cause both of the involved serial dream states and of the vivid perceptual drowsiness complications. The similarity of these states to the oft described alienation psychoses will at once remind the reader of Nordau's fervent chapter<sup>1</sup> on Mysticism.

The artist and the poet must in some way get out of the world of percepts and into the world of pure sensory qualities. And this is not an easy thing for most of us to do. Most of us were there when we were children and the most prosaic of us tend to slip over the frontier in the pre-sleeping state or when under the influence of artificially induced drowsiness. A very few of us are vagabonds enough to be able to wander back and forth at will, and these are the artists and poets.

#### 4. ISOLATION OF ASSOCIATION TRAINS

This characteristic of drowsy states is closely related to that described in the foregoing section. The difference lies in the fact that there we were dealing with single perceptual or ideational contents while here we have to do with such serial chains of associations as may sometimes be set up. In the drowsy state proper, in the experience of the writer, these chains do not develop,—the genuine drowsiness complication being either a simple “flashlight” hallucination or else a sort of “boomerang” composition, tending to return always upon itself rather than to lead on to further and new associations. But such experiences as those described under Case IX seem to belong to much the same state. These fantastic thought systems evolve most easily in times of fatigue, loss of sleep or unduly prolonged intellectual work. When the drowsy state is thus extended over a long period of time, association chains and reasoning show much the same behavior that perceptual or ideational states do in the drowsiness state proper. The essential thing is the release of all intellectual inhibition. An idea, plan or desire is thus able to make unimpeded progress from stage to stage of its development with what seems at the time to be unerring logic. Its evolution is accompanied by the strong emotion and the feelings of exuberance, bouyancy, confidence and eager enthusiasm characteristic of the night worker. In my own case the feverish plans, insights and conclusions developed in midnight hours have almost invariably faded into pale grays on the arrival of the next “waking consciousness”

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<sup>1</sup> Degeneration, Ch. I.

much as did Maeterlinck's "Bluebird" when brought into the sunlight.

The drowsiness thought process behaves much as do the familiar dream states in which cosmic riddles are solved and impossible mechanical devices evolved. One recalls in this connection the oft-told case cited by Crichton-Brown<sup>1</sup> of the man who determined to write out the solution arrived at in order to preserve it from the amnesia which usually developed on awaking. When morning came he looked eagerly for the paper on which he had written during the night and read there only the single mystic sentence, "A strong smell of turpentine pervades the whole."

Rivers and Weber<sup>1</sup> have shown that mental fatigue, anæsthetization of the muscle involved, or small doses of alcohol may have the same effect, viz.: a momentary falling off of fatigue due to disregard of secondary afferent impulses which are the basis of the fatigue feeling. Much the same situation seems to be present in the drowsy state and the disregard of obstacles and treacherous points in the chain of reasoning is probably due to quiescence of the higher centres which control both motor output and processes of inference. Such a condition is reconcilable with any of the current theories of sleep and with most theories of epilepsy, to the intellectual auræ of which the drowsiness hallucinations seem to bear a close resemblance.

### 5. GRANDEUR AND VASTNESS

Closely connected with the transformation of imagery type and the isolation of association chains is the tendency toward grandeur and vastness which usually characterizes the drowsy states. This is true of the simpler perceptual complications as well as of the further developed thought processes. Thus in Case II the idea of a gigantic insect, and in Cases 3, 4, and 7, the interpretation of limited motor processes in terms of long journeys or of complicated activities such as dress-making and opening combination locks, and in Case I the personification of monotonous noises, show the tendency to magnify simply sensory impressions. In another case, not recorded here, a space of perhaps three feet was taken to represent the ocean.

When a chain of reasoning is involved, all projects are fertile and all outcomes expansive. The common tendency for the disagreeable, the undesirable and the unfavorable fact to oblivescence seems here to be especially strong. The drowsiness experience, in the case of the present observers at least,

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<sup>1</sup>On the Effect of Small Doses of Alcohol. *British Journal of Psychology*, Jan., 1908.

resembles that following upon the inhalation of diluted nitrous oxide gas,—“the mental symptoms consist in convictions of emancipation, relief and happiness, in grand and sublime ideas which in their expansion seem to break down all barriers of doubt and difficulty and to make a wish and its realization one. . . . It is at the point where the habitual control or check of the highest centres is withdrawn and where subordinate centres are free to indulge in unwonted activity that the expansive dreamy thoughts and exalted feelings present themselves in the progress of nitrous oxide gas intoxication.”<sup>1</sup>

#### 6. AMNESIA FOR PROCESSES AND EVENTS

occurring during the drowsy state comes quickly. This is shown by the tendencies of these experiences to escape observation unless special interest directs attention to them. Further, unless they are recorded or reported promptly they are soon forgotten or elaborated by the retrospective attempts of waking consciousness.

#### 7. ABSENCE OF SYMBOLISM

So far as the writer has been able to discover there is no evidence of special symbolism in these states except in so far as they reflect the recent experiences or occupations of the individual. The composition of their content seems to consist chiefly in “flashlight” perceptual complications of the memories of recent experiences with perseverative tendencies and present sensory impressions. Only in so far as the data from these three sources is somewhat dependent on the fundamental interests of the observer can the drowsiness psychosis be said to be symbolical.

(Note). Sidis (Experimental Study of Sleep) has given “extreme suggestibility” as one mark of the hypnoidal state. This state bears a close resemblance to the condition of normal drowsiness, and may, perhaps, be identical with it. But suggestibility seems to be a general statement of the possibilities of the pre-sleeping state, rather than an introspective description of the drowsiness consciousness.)

By way of summary we may say, finally, that the drowsiness hallucination seems to be a “flashlight” perceptual fusion or complication, and is further characterized by transformation of imagery type; sensory, perseverative and ideal substitution; fluid association chiefly on a sensory basis; and by isolation of association trains when they develop; and that it is accompanied by tendencies toward grandeur and vastness, by rapidly developed amnesia and by absence of symbolism.

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<sup>1</sup>Crichton-Brown: *op. cit.*